

NEUROPTERA AND TRICHOPTERA
COLLECTED BY MR. J. D. BRADLEY ON
GUADALCANAL ISLAND, 1953-54

By D. E. KIMMINS

DURING the period of the British Museum Expedition to Rennell Island Mr. J. D. Bradley also made collections on Guadalcanal Island. The Neuroptera only amounted to fourteen examples, two species of Myrmeleonidae and one of Chrysopidae, none being endemic.

The Trichoptera of the Solomon Islands as a whole appear to be almost completely unknown and I have only been able to trace one species described from Solomon Island material (*Anisocentropus solomonis* Banks). One other species, *Notanatolica magna* (Walker) was taken on Rennell Island by both the Danish and British Expeditions. This apparent scarceness can only be due to lack of collecting since during the periods that Mr. Bradley worked on Guadalcanal Island, he took no fewer than fourteen species, all but two of which are described as new in this paper. Of the other two, one may be *Anisocentropus solomonis* Banks and the other is a species of *Nyctiophylax* represented by a single female.

The types of all new species are in the British Museum (Natural History).

NEUROPTERA

Family MYRMELEONIDAE

Distoleon lentus (Walker)

Honiara, 10-14. ix., 3, 5-9. x. 1953, 2 ♂, 7 ♀.

Tapenanje, 10-23. xii. 1953, 1 ♀.

DISTRIBUTION. Ceylon, India, Burma, Malaya, Hainan, Java, New Guinea, Queensland, New Hebrides, New Britain, Solomon Islands, Fiji.

Myrmeleon celebensis McLachlan

Honiara, 5-14. x. 1953, 5-11. i. 1954, 2 ♀, 1 ?.

DISTRIBUTION. Celebes, Malaya, Sumatra, New Guinea, Aru Islands, New Hebrides.

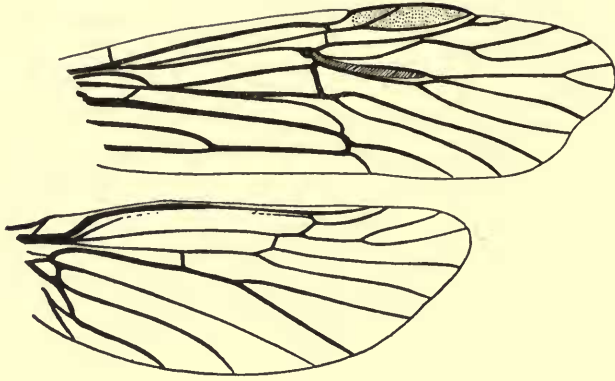


FIG. 1. *Apsilochorema rossi* sp. n. ♂ wings.

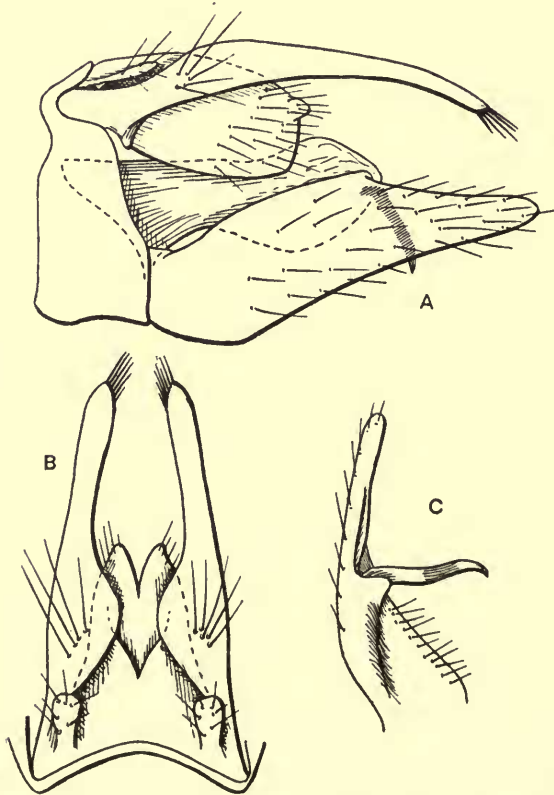


FIG. 2. *Apsilochorema rossi* sp. n. ♂ genitalia. (A), lateral ; (B), tenth segment, dorsal ; (c), right clasper, dorsal.

Family CHRYSOPIDAE

Italochrysa chloromelas (Girard)

Honiara, 4-11. i. 1954, 1 ♀.

DISTRIBUTION. New Hebrides, New Caledonia, Lifu, Solomon Islands.

TRICHOPTERA

Family RHYACOPHILIDAE

Apsilochorema rossi sp. n. (Figs. 1, 2)

Tapenanje, 10-15. xii. 1953, 1 ♂.

General colour varying shades of fuscous. Fore wing with R_{2+3} forming a small fork at apex. Cell M_1 very short. Wing-fold or pouch about as long as pterostigma, slender.

♂ GENITALIA. A strong process to seventh sternite. Ninth segment reduced dorsally to a narrow, transverse band. Tenth segment forming a short, transparent hood, quadrate from the side, excised apically from above. At its base on each side is a short, flattened cercus and a long, arched spine, which is dilated inwardly in the basal half and armed apically with a tuft of spines. Aedeagus short, stout, semi-membranous. Clasper long, moderately broad in basal half, then tapering to a rounded, finger-like apex. From the inner surface arises a slender, sinuous, inwardly directed spine, its basal attachment flexible.

Length of fore wing, 4.5 mm.

♂ type mounted as microscope preparations. This species is closely related to the Fijian *A. banksi* (Mosely). It differs in the fore wing in having R_2 and R_3 separated apically, a shorter cell M_1 and a longer fold in the centre of the wing. In the genitalia, the lateral processes of the tenth segment are longer and stouter, the segment is excised apically and the aedeagus stouter.

Synagapetus salomonis sp. n. (Fig. 3)

Tapenanje, 10-15. xii. 1953, 2 ♂.

General colour medium fuscous, venation typical of *Synagapetus*, discoidal cell in fore wing short, about one and a half times as long as broad. In hind wing, R_2 and R_3 are fused throughout.

♂ GENITALIA. Sixth sternite with a long, slender, ventral process, arising from a large, conical base and projecting almost at right angles to the sternite. Ninth segment narrowed dorsally. Tenth segment forming a large and deep hood, obliquely and shallowly concavo-truncate apically in side view, apices slightly hooked inwards. Cercus short and truncate. Aedeagus stout, with a pair of stout, curved spines on its upper surface, apex clavate in side view, excised in dorsal view. Clasper rather slender, nearly as long as tenth segment, obliquely truncate apically.

Length of fore wing, 3.25 mm.

♂ type mounted as microscope preparations, ♂ paratype in 2% formaldehyde solution. This species is perhaps nearest to *S. crala* Mosely but differs in the more quadrate cerci, narrower claspers and differently formed aedeagus. Two females from Honiara, 9-10.x.1953, may possibly belong to this species.

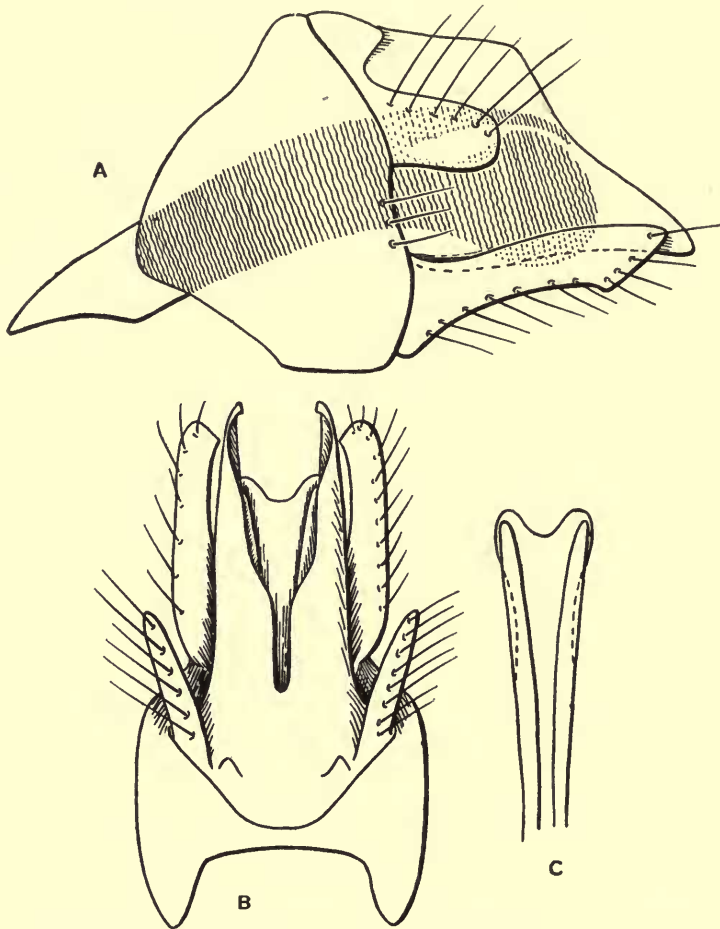


FIG. 3. *Synagapetus salomonis* sp. n. ♂ genitalia. (A), lateral; (B), dorsal; (C), aedeagus, dorsal.

Family PHILOPOTAMIDAE

Chimarra biramosa sp. n. (Figs. 4A, 5)

Tapenanje, 10-15.xii.1953, 2 ♂, 6 ♀.

Head castaneous, warts light ochraceous, antennae (incomplete) greyish ochraceous, palpi fuscous. Thorax castaneous above, with the pronotal and meso-

scutellar warts ochraceous, sides lighter ochraceous. Abdomen pale fuscous, pleurae ochraceous, genital segment and genitalia piceous. Wings (denuded) fuscous, venation as in Fig. 4A.

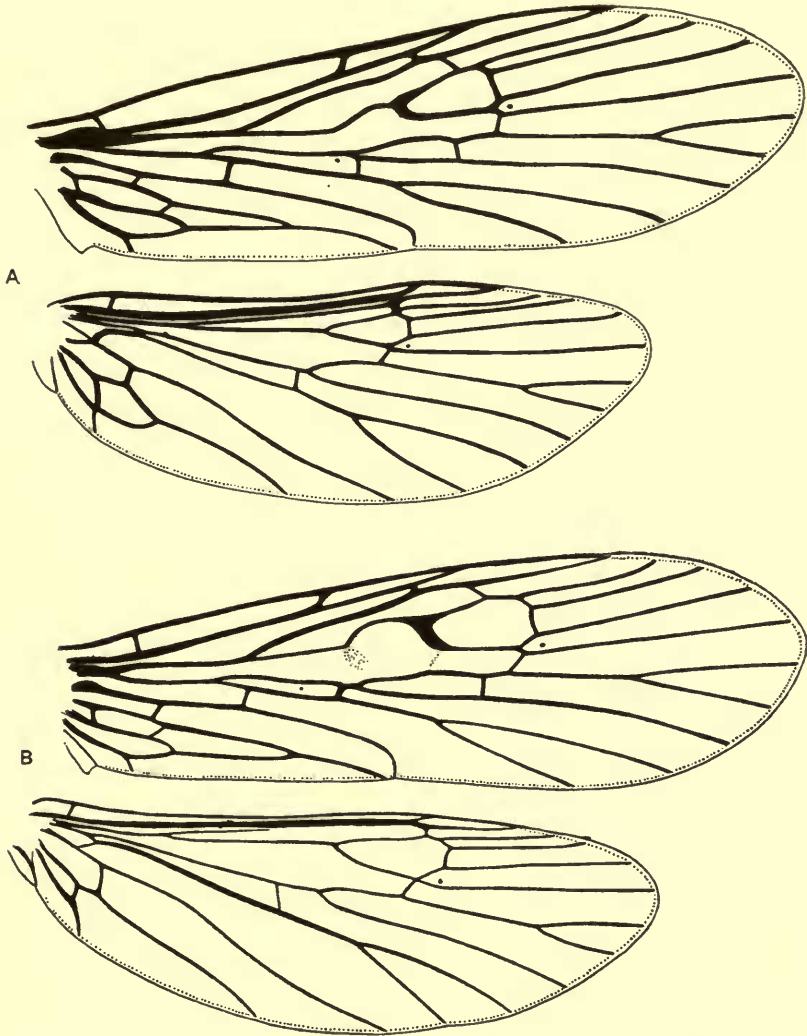


FIG. 4. *Chimarra* spp. n. ♂ wings. (A), *C. biramosa*; (B), *C. aureofusca*.

♂ GENITALIA. Eighth tergite with the centre of its apical margin excised. Ninth segment narrowed above and with a narrow, keel-like ventral process. Tenth segment long, hood-like, the sides strongly sclerotized and forming tapering, blunt blades, curving down on each side of the aedeagus. Central part of tenth segment membranous. Cercus short and rounded. Aedeagus with a membranous apex

and enclosing a short, blackened spine. Clasper in side view terminating in two widely separated branches, the lower the narrower. From above, this lower branch is seen to be a broad lobe with a small, hooked apex. At its base on the upper surface a small, plate-like projection or branch can be seen in a cleared example.

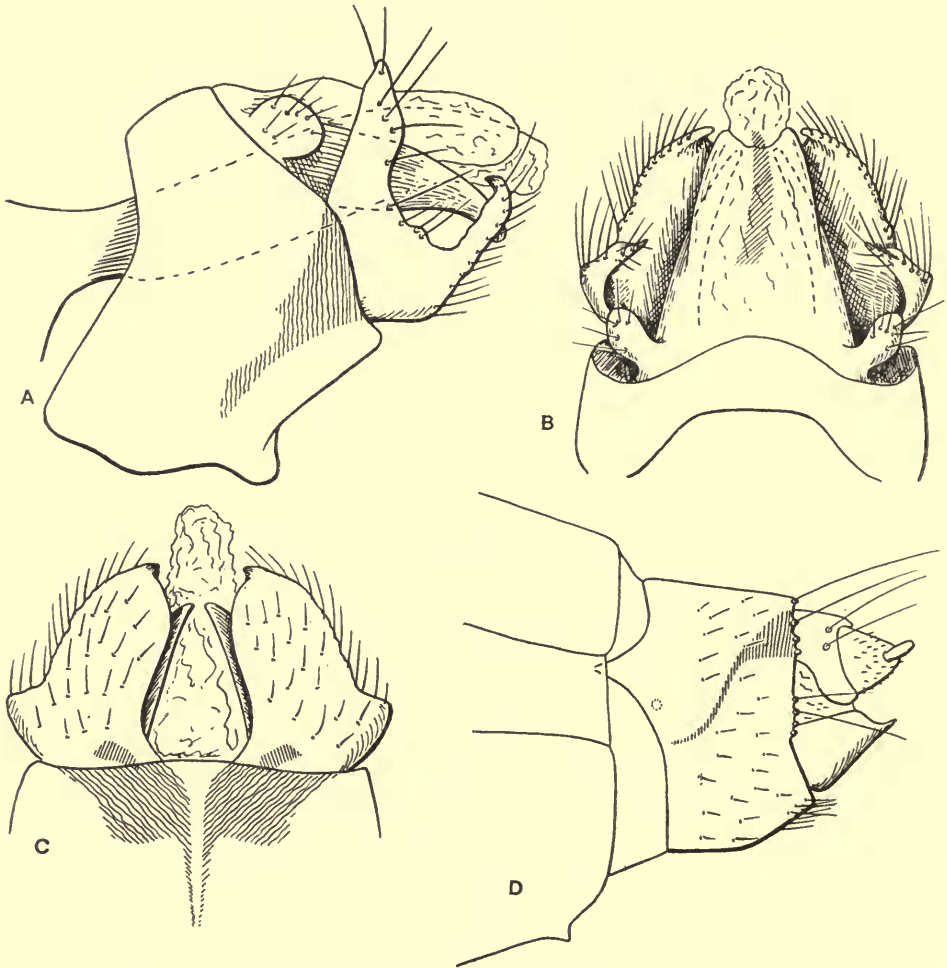


FIG. 5. *Chimarra biramosa* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, dorsal; (C), ♂, ventral; (D), ♀, lateral.

♀ GENITALIA. Seventh sternite with a small ventral process. Eighth segment annular, apical margins fringed laterally with long setae. Ninth tergite arched, with long, sinuous, basal apodemes, sternite with two triangular sclerites, their inner margins touching. Tenth segment with a pair of short, single-segmented cerci.

Length of fore wing, 4.5 mm.

♂ type, ♀ allotype (with ♂ wings, ♂ and ♀ abdomens mounted as microscope preparations), and paratypes in 2% formaldehyde solution. This species differs from all the Australasian species known to me in the widely bifid claspers of the male.

Chimarra sp.

Tapenanje, 10-15.xii.1953, 2 ♀.

These specimens are paler than the females of *C. biramosa* sp. n., they show some differences in venation and in genitalia, but in the absence of males I do not propose to give them a name.

Chimarra aureofusca sp. n. (Figs. 4B, 6)

Honiara, 4-8.x.1953, 1 ♂, 1 ♀.

General colour golden brown. Head densely clothed with short, fuscous pubescence, warts not conspicuously paler, antennae and palpi pale fuscous. Thorax

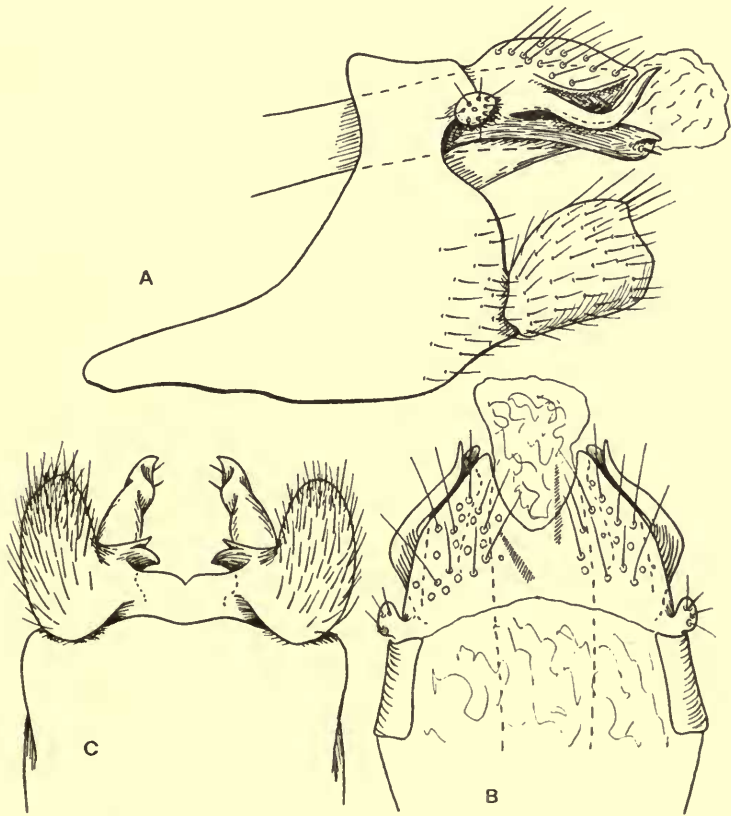


FIG. 6. *Chimarra aureofusca* sp. n. ♂ genitalia. (A), lateral; (B), ninth and tenth segments, dorsal; (C), claspers and aedeagus, ventral.

fuscous above, mesoscutellar warts concolorous. Legs pale fuscous, spurs fuscous. Abdomen golden brown, pleurae paler. Wings pale yellowish brown, with traces of fuscous pubescence, venation and margins fuscous. *Rs* in fore wing strongly sinuous, discoidal cell subquadrate. Thyridial and median cells of about equal length. In the hind wing, *Rs* is obsolete or fused with *Sc* about mid-way. *2A* running into and fusing with *3A*, not joining *1A* to form a closed cell as in *C. biramosa*.

♂ GENITALIA. Ninth tergite membranous above, ventral surface much produced basally. Tenth segment flattened, plate-like, excised at the centre of its apical margin to form two triangular lobes, densely covered with long setae. From its lower, lateral margins near the base arise on each side two spines, the upper slender, sinuous and acute, the lower stout, straight, its inner margin corrugated. Cercus short, rounded, set laterally near the base. Aedeagus long, apex membranous and enclosing two short, black spines. Claspers short, stout, from the side truncate apically. From beneath they are ovate, their inner margins fused in a transverse plate and produced in bifid processes, upper acute, lower rounded.

♀. Similar to male in general appearance. GENITALIA. Eighth, ninth and tenth segments produced to form a narrow ovipositor, terminating in a pair of single-segmented cerci.

Length of fore wing, 4.25 mm.

♂ type, ♀ allotype in 2% formaldehyde solution, ♂ with one pair of wings and genitalia, ♀ with genitalia, mounted on microscope slides. This species does not appear to have any close relationship with any of the Australasian species known to me. The venation of the fore wing resembles that of *C. thienemanni* Ulmer in the strongly sinuate *Rs* and subquadrate discoidal cell, but in the hind wing the discoidal cell is larger and there is no closed anal cell between *1A* and *2A*. The genitalia differ widely in pattern.

Family POLYCENTROPODIDAE

Polyplectropus bradleyi sp. n. (Figs. 7, 8)

Honiara, 4-8.x.1953, 1 ♂, 1 ♀.

Tapenanje, 10-15.xii.1953, 5 ♂, 3 ♀.

Head fuscous, with pale ochraceous warts. Antennae ochraceous, moderately stout (incomplete). Palpi ochraceous. Pronotum ochraceous, meso- and metanota fuscous, scutellum and scutal warts of mesothorax ochraceous. Legs dull ochraceous. Abdomen ochraceous. Wings pale fuscous, with slightly darker veins, neuration typical of genus.

♂ GENITALIA. Upper part of ninth segment membranous, projecting beyond the eighth as a small, triangular lobe. Centre of ventral margin produced and hairy. Tenth segment divided dorsally, complex. From the side it forms a short, deep plate with a rounded apical margin, its lower apical angle produced in three branches. The upper is more sclerotized and forms an incurving hook. Below it is a transparent, hairy finger and within this at its base is a shorter, flattened, triangular

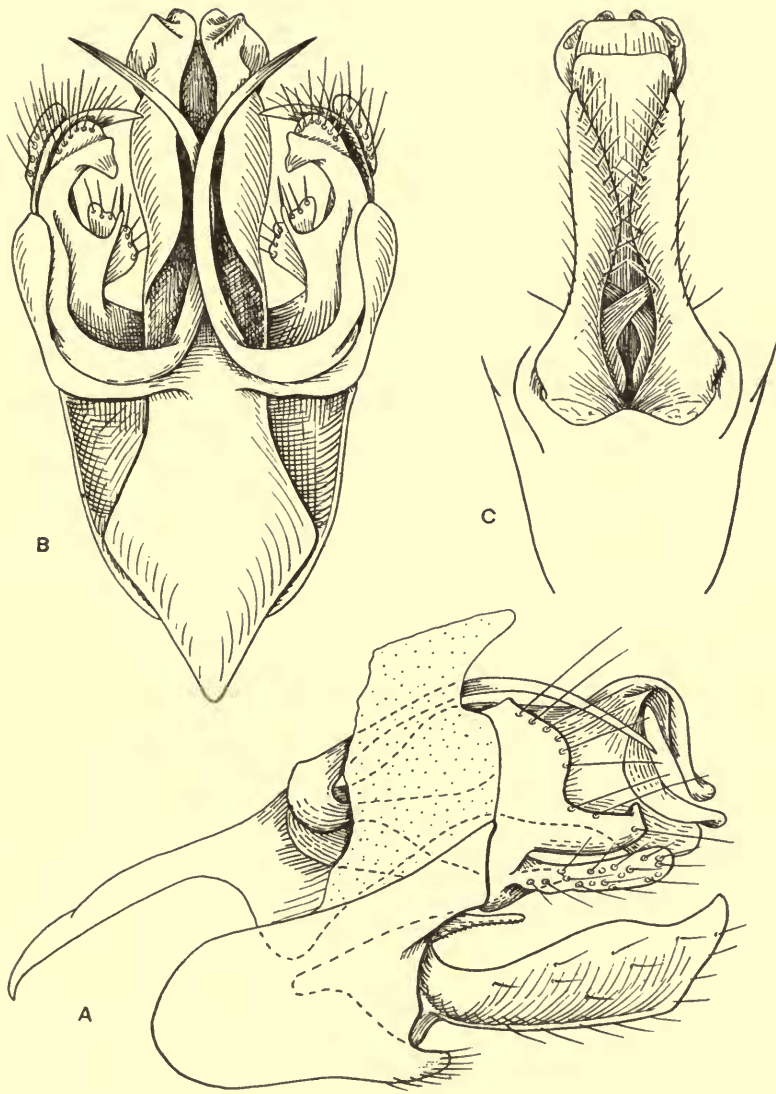


FIG. 7. *Polyplectropus bradleyi* sp. n. ♂ genitalia. (A), lateral; (B), dorsal (upper part of ninth segment omitted); (C), claspers and aedeagus, ventral.

lobe, fringed with hairs. This is more clearly seen in a preparation in dorsal aspect, in which aspect can also be seen a short, transparent finger, lying above it. From the basal margin of the tenth segment arises a slender spine, directed first basally, then curving apically and downward, situated above and to one side of the aedeagus. The latter is stout, with a pair of thin, narrow plates arising from its dorsal surface near the apex and curving sinuously down towards it. Clasper sinuous, apex slightly dilated, obliquely truncate. From beneath, the apex is acute. The outer surface of the clasper is concave and at the base there is a short, inner branch.

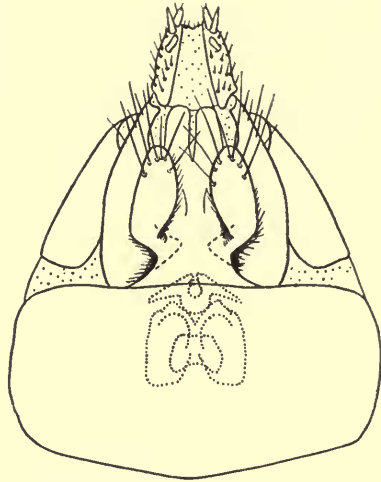


FIG. 8. *Polyplectropus bradleyi* sp. n. ♀ genitalia, ventral.

♀. Resembling male in coloration, antennae a little more slender. Median tibia moderately dilated. Ninth tergite narrowed above, lateral gonapophyses spatulate. Tenth segment short, with three pairs of apical processes, median pair acute, others rounded.

Length of fore wing, 4 mm.

♂ type, ♀ allotype (Tapenanje) in 2% formaldehyde solution, wings of ♂ and abdomens of ♂ and ♀ mounted as microscope preparations, paratypes in 2% formaldehyde solution. This species appears to approach *P. javanicus* Ulmer in the structure of the male genitalia, especially in the side view of the clasper and in the presence of two long, curved spines. It differs in the more complex tenth segment and the produced centre of the ninth sternite. Ulmer does not figure the aedeagus of his species.

Nyctiophylax sp.

Tapenanje, 10-15. xii. 1953, 1 ♀.

Family HYDROPSYCHIDAE

Hydropsyche tapena sp. n. (Fig. 9)

Tapenanje, 10-15.xii.1953, 1 ♂.

General colour pale ochraceous, wings denuded of pattern. Antennae (incomplete) apparently without the customary spiral marking. Meso- and metanota marked with fuscous on the shoulders. Venation typical of the genus.

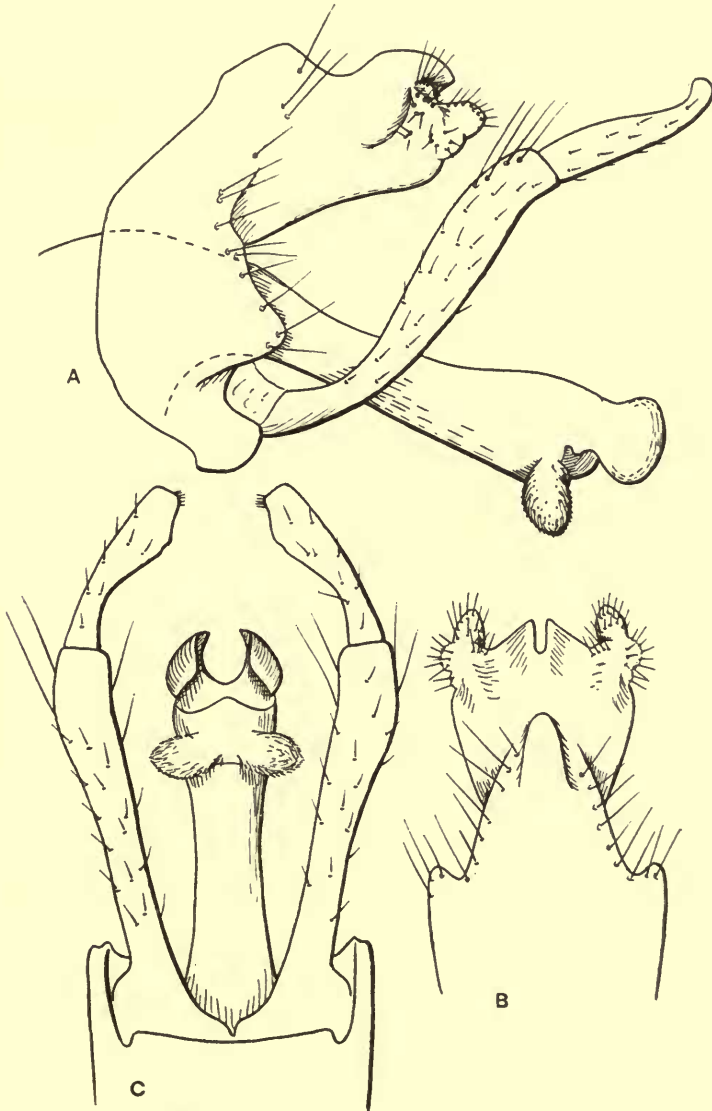


FIG. 9. *Hydropsyche tapena* sp. n. ♂ genitalia. (A), lateral; (B), ninth and tenth segments, dorsal; (C), claspers and aedeagus, ventral.

♂ GENITALIA. Ninth segment with large, triangular side-pieces, dorsal margin triangularly produced and fused with the tenth segment. The latter forms the usual hood; from the side the upper margin is strongly sinuous, terminating in a blunt hook. From above, this hook is medianly excised and forms two triangular lobes. Lateral angles of tenth segment with short, rounded processes, densely setose, and at their bases are some setose warts. Aedeagus slender, slightly clavate at its apex, which is divided into four lobes. Two are reniform in side view, hollowed on their inner surfaces and separated by a rounded excision. Below them are two somewhat roughened processes, capable of being directed downward and outward. Clasper long and slender, sinuous in side view, basal segment twice as long as apical; in ventral view, the latter is dilated internally in its apical half, apex truncate, with a tuft of short setae.

Length of fore wing, 9 mm.

♂ type in 2% formaldehyde solution, abdomen mounted as microscope preparation. This species resembles *H. tepoka* Mosely (New Zealand) in the form of the male genitalia, particularly in the quadrifid armature of the apex of the aedeagus, and the rather blunt processes of the tenth segment. The claspers are more slender and the apical segment proportionately longer. It may be mentioned here that in the New Zealand species of *Hydropsyche*, the cross-vein closing the median cell in the hind wing has proved rather unstable and is frequently absent, the venation thus resembling *Cheumatopsyche*. Mosely has, in fact, placed Tillyard's *philpotti* in this genus, in spite of the close resemblance of the male genitalia to *Hydropsyche colonica* McLachlan. There is, however, another character which can be used to separate *Hydropsyche* and *Cheumatopsyche*, namely the relative degree of separation of *M* and *Cu* in the hind wing. In *Hydropsyche*, *M* and *Cu* run very close together in the basal half of the wing, whereas in *Cheumatopsyche* they are well separated. On these grounds, Tillyard's *philpotti* should be returned to *Hydropsyche*.

Family HYDROPTILIDAE

Hydroptila triloba sp. n. (Fig. 10)

Honiara, 4-8. xii. 1953, at light, 4 ♂, 7 ♀.

The wings show traces of fuscous bands near base and about mid-way. In the ♂ the antennae have about thirty segments, and there are two pyriform scent-organ caps on the back of the head, but I have been unable to make out any scent-organs.

♂ GENITALIA. Ninth segment with its dorsal, apical margin projecting in a short triangle; ventral margin widely excised, the lateral margins forming short, blunt fingers, carrying a few setae. Tenth segment fused to ninth, lightly sclerotized, long, deeply excised in dorsal aspect, and with a semi-membranous, truncate plate between the lateral arms, but separated from them, except at the base. In side view, the lateral arms are slightly clavate. At the base of the excision is an elevated acute tooth. Aedeagus long, slender, with the usual twisted spine or sheath. Claspers long, narrow, slightly down-curved with blunt apices. The outer surfaces carry a number of stout, socketed teeth and above the bases of the claspers is a

lightly sclerotized, pointed plate, a little shorter than the claspers, and also with two similar teeth on its lower surface. There is a short, pointed ventral process on the seventh segment.

Length of fore wing, 2 mm.

♂ type mounted as microscope preparation, paratypes in 2% formaldehyde solu-

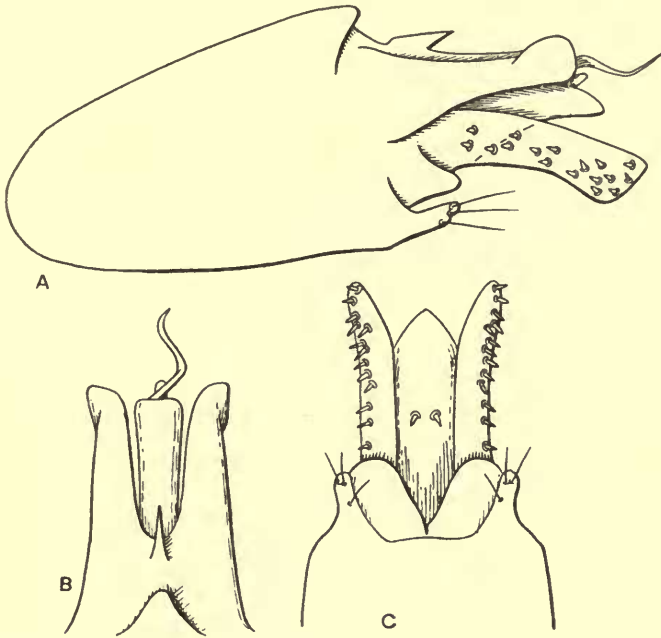


FIG. 10. *Hydroptila trilobata* sp. n. ♂ genitalia. (A), lateral; (B), tenth segment and aedeagus, dorsal; (C), claspers, ventral.

tion. This species is closely allied to *Hydroptila incertula* Mosely (S. Queensland). It differs in the presence of a short, acute tooth at the base of the excision of the tenth segment, the clavate apices of the lateral arms of this excision and the less down-curved claspers.

Family CALAMOCERATIDAE

Anisocentropus sp.

Tapenanje, 10-15.xii.1953, 2 ♂, 1 ♀.

These specimens have the wings completely denuded of pubescence. They may possibly be *Anisocentropus solomonis* Banks, described from two females as having a broad, irregular band of blueish or purplish scales on the fore wing, but in view of the denuded state of the present specimens, I think it better not to attempt to identify them beyond the genus.

Family LEPTOCERIDAE

Oecetis reticulata sp. n. (Fig. 11)

Honiara, 4-8.x.1953, at light, 1 ♂.

General colour very pale fuscous, membrane of fore wing shaded with deeper fuscous at the anastomosis and at the main forks.

♂ GENITALIA. Eighth tergite produced in a large, reticulated shield, covering the ninth and tenth segments from above. It is pale waxy yellow, bordered with dark brown. Preceding tergites normal. Ninth segment with its upper part reduced

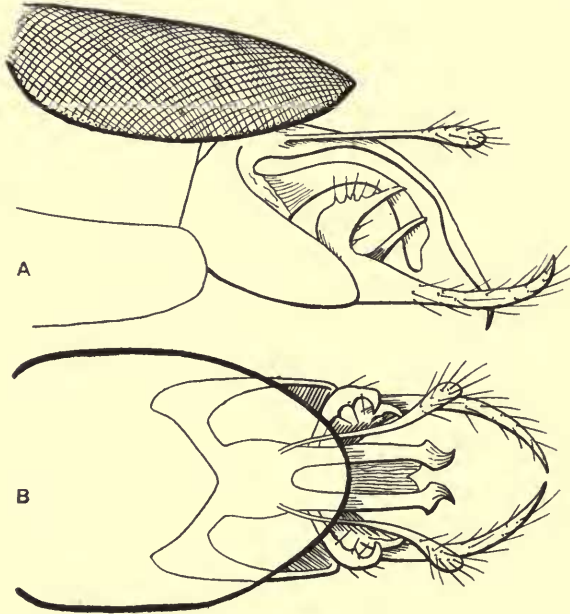


FIG. 11. *Oecetis reticulata* sp. n. ♂ genitalia. (A), lateral; (B), dorsal.

to a narrow, transverse band, to which is attached the tenth segment. This takes the form of two long, slender, down-curved spines, each dilated laterally before the acute apex. At their bases arise the cerci, shorter than the spines, slender, with moderately clavate apices. Aedeagus short, down-curved. Claspers broad and contiguous basally, each soon tapering to a slender, calliper-like apex, projecting beyond the tenth segment. At its base arise two short, curved branches, directed upward and tailward, the basal branch on the upper margin distinctly serrate, the other arising nearer the inner margin.

Length of fore wing, 4.5 mm.

♂ type mounted as a microscope preparation. In the shield-like eighth segment and slender, clavate cerci this species resembles *O. testacea* (Curtis), but it differs from most of the species with reticulated tergites in having only the eighth so formed.

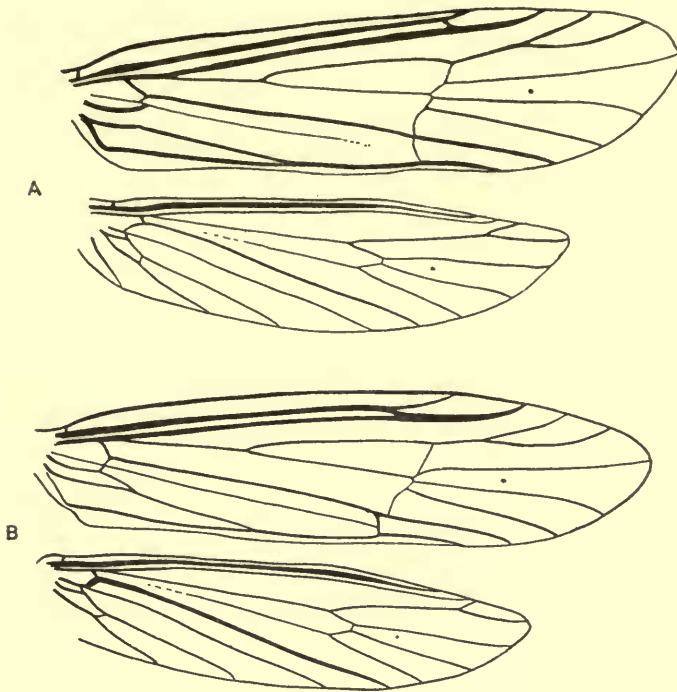


FIG. 12. *Triaenodes* spp. n. ♂ wings. (A), *T. picea*; (B), *T. excisa*.

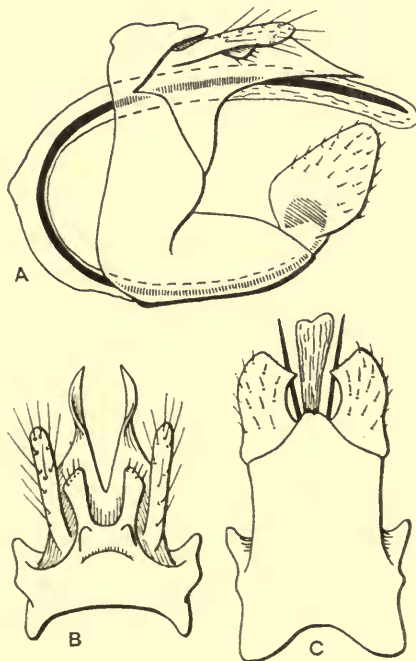


FIG. 13. *Triaenodes picea* sp. n. ♂ genitalia. (A), lateral; (B), ninth and tenth segments, dorsal; (C), ninth segment, claspers and aedeagus, ventral.

Trianodes picea sp. n. (Figs. 12A, 13)

Tapenanje, 10-15. xii. 1953, 3 ♂.

General colour of the body and fore wings piceous, the anastomosis of the latter white. Antenna with the two basal segments piceous, remainder pale fuscous, with darker annulations. The basal segment has on its inner surface a whitish false suture, somewhat simulating the scent-organ cap in certain species of *Trianodes* (*Trianodella*). There are indications of a tuft of long hairs on the inner surface. Palpi and legs fuscous. Venation fairly typical of *Trianodes*, in fore wing Cu_1 is a strong vein, running straight to the wing margin. The free, basal part of Cu_1 is very weak, resembling a cross-vein, apical part fused with the extended anal vein. Cu_2 is more or less obsolete towards its apex, in the type not reaching the wing margin.

♂ GENITALIA. Ninth segment with its upper part reduced, apical margin produced in a pair of short thin, obliquely truncate lobes, separated by a U-shaped excision. Tenth segment forming a thin hood, from above deeply and acutely excised, the sides of the excision with acute apices. Cercus digitate, about two-thirds as long as tenth segment. Aedeagus long, slender, semi-membranous, stiffened by two sclerotized ribs. It apparently arises near the base of the claspers and thence runs basally before curving upward and tailward beneath the tenth segment. Running parallel with the aedeagus on each side is a long, slender spine. Clasper short, stout, somewhat rhomboidal from the side, truncate apically from beneath, with a serrate ridge on its inner surface.

Length of fore wing, 5 mm.

♂ type mounted as a microscope preparation, 2 ♂ paratypes in 2% formaldehyde solution. The genitalia of this species are similar in pattern to those of a number of North American species of *Trianodes*, though of course differing in detail. It is quite distinct from its nearest geographical neighbours, *T. volda* Mosely and *T. insulana* Ulmer.

Trianodes excisa sp. n. (Figs. 12B, 14)

Tapenanje, 10-15. xii. 1953, 1 ♂.

General colour dark ochraceous. Antenna with long basal segment, its inner surface with a dense tuft of hairs, which become detached by clearing in caustic potash solution for preparation. Wing venation more typical of *Trianodes* than in *T. picea*, Cu_2 terminating in Cu_{1b} in fore wing. Apex of fore wing less broadly rounded.

♂ GENITALIA. Ninth segment with the lower part only slightly projecting. Dorsal apical margin produced in two small, rounded lobes and below them a pair of bifid fingers. Tenth segment forming a bifid hood, the branches acute from above, rounded apically from the side. Cerci digitate, slightly longer than the bifid fingers of the ninth segment. Aedeagus and spines much as in *T. picea*. Claspers stout, about as long as ninth segment. From the side each is pyriform, narrowest at base, apex excised and armed with teeth.

Length of fore wing, 4.5 mm.

♂ type mounted as a microscope preparation. This species is closely related to *T. picea* sp. n., but differs in its more normal venation, less broadly rounded apex of fore wing, longer and bifid processes to the ninth segment, differently shaped tenth segment, shorter lower part of ninth segment and larger, pyriform claspers.

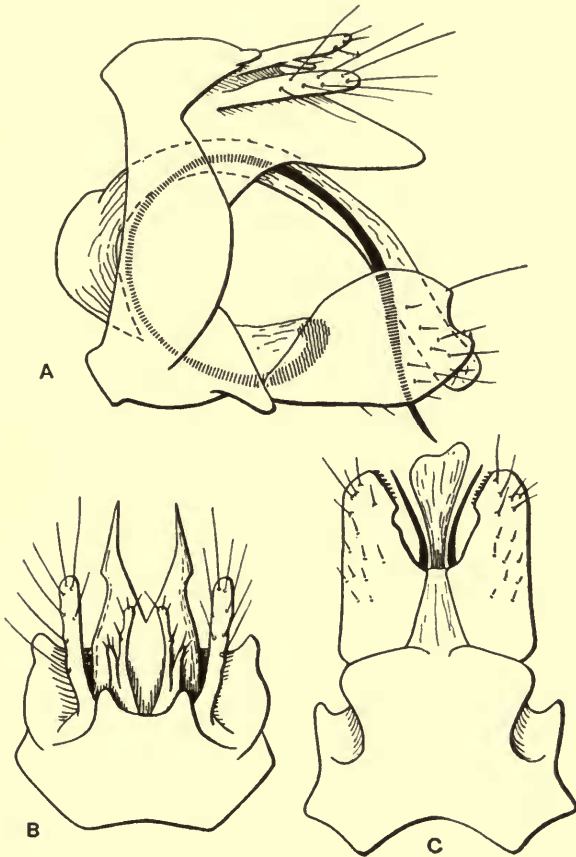


FIG. 14. *Triaenodes excisa* sp. n. ♂ genitalia. (A), lateral; (B), ninth and tenth segments, dorsal; (C), ninth segment, claspers and aedeagus, ventral.

Triaenodes trifida sp. n. (Fig. 15)

Tapenanje, 10-15. xii. 1953, 2 ♂.

General colour ochraceous, head and thorax rather darker. Antenna light ochraceous with darker annulations. Basal segment with a suture along its upper surface, from which can be exerted a membrane, covered with scales. In a fluid-preserved specimen these scales can be seen as a reddish mass within the segment. Wings more acute apically than in *T. excisa*, venation much as in the two previous species.

♂ GENITALIA. Ninth segment reduced dorsally to a narrow, transverse band. Tenth segment composed of a very long, slender, pale finger, arched from the side, slightly clavate and setose apically. On either side of this central process is an even longer, downwardly curved, slender spine. Cerci short, digitate. Aedeagus long, moderately slender, its apex deeply bifid and membranous. Clasper about as long as ninth segment, from the side about two and a half times as long as wide, apex terminating in a small hook. The inner basal angles are fused and produced tailward in a pair of divergent, downwardly curved blades, with rounded apices.

Length of fore wing, 3.25 mm.

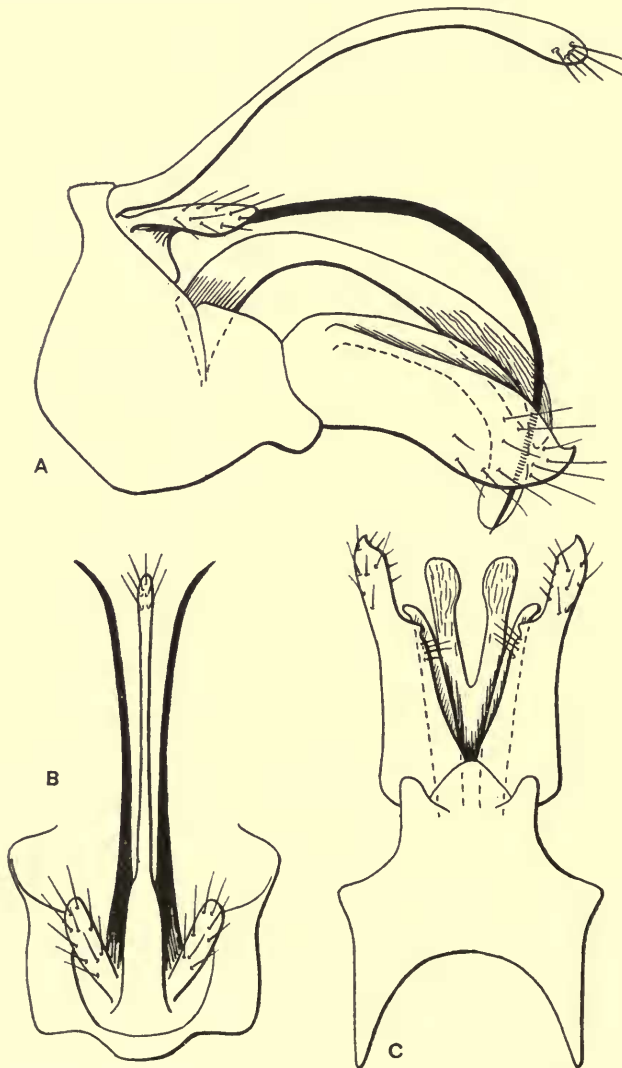


FIG. 15. *Triaenodes trifida* sp. n. ♂ genitalia. (A), lateral; (B), ninth and tenth segments, dorsal; (C), ninth segment, claspers and aedeagus, ventral.

♂ type mounted as a microscope preparation, ♂ paratype in 2% formaldehyde solution. The presence of scent scales on the basal segment of the antenna recalls the tuft of scent hairs on the antenna of *Triaenodes chelifera* (Mosely), but in the present species there is no flap-like cover, the scales being on a membrane and when not exerted, are housed within the basal segment. *T. trifida* differs from the two previous species in the long median process and lateral spines of the tenth segment, and the shorter and broader, blade-like processes from the bases of the claspers, which latter are even more elongate.

Triaenodes lanceolata sp. n. (Fig. 16)

Tapenanje, 10-15. xii. 1953, 1 ♂.

General colour dark ochraceous, fore wing membrane pale fuscous. Antennae broken, basal segment of each without scent scales. Maxillary palpi incomplete. Venation typical of genus.

♂ GENITALIA. Ninth segment nearly as long dorsally as ventrally, dorsal apical margin triangularly produced at its centre. Tenth segment composed of a narrow lanceolate plate, fringed with teeth and below it a thin hood, apical margin acutely

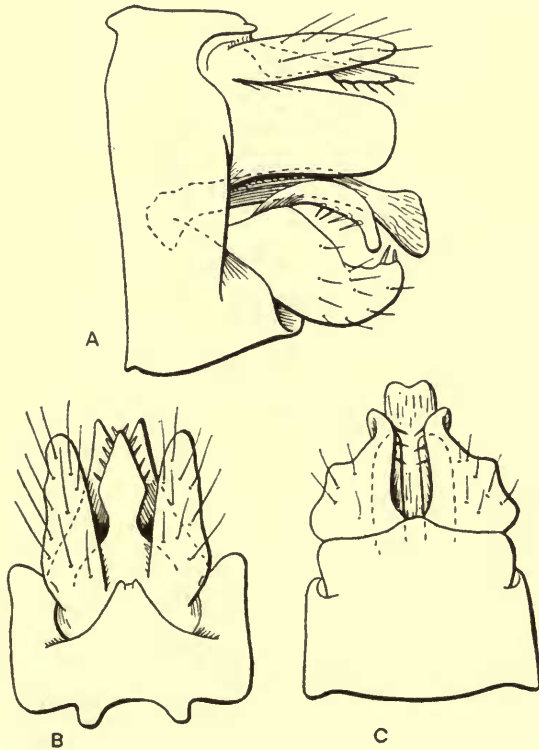


FIG. 16. *Triaenodes lanceolata* sp. n. ♂ genitalia. (A), lateral; (B), ninth and tenth segments, dorsal; (C), ninth segment, claspers and aedeagus, ventral.

excised in dorsal view, about as long as median process. Cerci about as long as tenth segment, stout, digitate. Aedeagus short, moderately slender, its membranous apex slightly curved. Clasper about as long as ninth segment, stout and slightly upcurved from the side, broad at base beneath, outer margin sinuously converging to make a slender apex, which is toothed on its inner surface.

Length of fore wing, 8.25 mm.

♂ type mounted as microscope preparations. This species differs from those previously described in this paper in the shorter, less curved aedeagus, the less reduced upper part of the ninth segment and the different form of the tenth segment.

